

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (previously presented): A system for monitoring rotating machinery comprising:

- at least one current sensor for detecting shaft grounding current in the rotating machinery;
- a monitoring device for monitoring real-time shaft grounding current values over time;
- a detector for determining the change and/or determining the rate of change, in the shaft grounding current;
- an evaluation system for producing a warning as a function of the change and/or rate of change, in the shaft grounding current wherein the warning generated is indicative of a developing problem with the rotating machinery.

Claim 2 (previously presented): The system as recited in claim 1 wherein monitoring real-time shaft grounding current values over time further comprises sampling real-time shaft current values for data reduction and compression over time.

Claim 3 (previously presented): The system as recited in claim 1 further comprising an electric motor wherein the warning is indicative of a developing problem with the electric motor.

Claim 4 (previously presented): The system as recited in claim 1 wherein the warning is indicative of a developing problem with the rotating machinery and the warning is further a function of the ratio of peak grounding current to average grounding current.

Claim 5 (previously presented): The system as recited in claim 1 wherein determining rate of change in the shaft grounding current further comprises determining a first order derivative of the shaft grounding current.

Claim 6 (previously presented): The system as recited in claim 1 wherein the warning is further a function of waveform frequency.

Claim 7 (previously presented): The system as recited in claim 1 wherein the warning is further a function of rotor rotational frequency.

Claim 8 (previously presented): (previously presented): A system for monitoring rotating machinery comprising:

- at least one voltage sensor for detecting shaft voltage in the rotating machinery;
- a monitoring device for monitoring real-time shaft voltage values over time;
- a detector for determining the change and/or determining the rate of change, in the shaft voltage;
- an evaluation system for producing a warning as a function of the change

and/or rate of change, in the shaft voltage wherein the warning generated is indicative of a developing problem with the rotating machinery.

Claim 9 (previously presented): The system as recited in claim 8 wherein monitoring real-time shaft voltage values over time further comprises sampling real-time shaft voltage values for data reduction and compression over time.

Claim 10 (previously presented): The system as recited in claim 8 further comprising an electric motor wherein the warning is indicative of a developing problem with the electric motor.

Claim 11 (previously presented): The system as recited in claim 8 wherein determining rate of change in the shaft voltage further comprises determining a first order derivative of the shaft voltage.

Claim 12 (previously presented): The system as recited in claim 8 wherein the warning is further a function of waveform frequency.

Claim 13 (previously presented): The system as recited in claim 8 wherein the warning is further a function of rotor rotational frequency.

Claim 14 (previously presented): A method for monitoring rotating machinery comprising the steps of:

detecting shaft grounding current in the rotating machinery;  
determining rate of change in the shaft grounding current;  
monitoring real-time shaft grounding current values over time;  
producing a warning as a function of the change and/or rate of change, in the shaft grounding current, wherein the warning generated is indicative of a developing problem with the rotating machinery.

Claim 15 (previously presented): The method for monitoring rotating machinery as recited in claim 14 wherein monitoring real-time shaft grounding current values over time further comprises sampling real-time shaft current values for data reduction and compression over time.

Claim 16 (previously presented): The method for monitoring rotating machinery as recited in claim 14 wherein the warning is indicative of a developing problem with an electric motor.

Claim 17 (previously presented): The method for monitoring rotating machinery as recited in claim 14 wherein the warning is indicative of a developing problem with the rotating machinery and the warning is further a function of the ratio of peak grounding current to average grounding current.

Claim 18 (previously presented): The method for monitoring rotating machinery as recited in claim 14 wherein determining rate of change in the shaft grounding current further comprises determining a first order derivative of the shaft grounding current.

Claim 19 (previously presented): The method for monitoring rotating machinery as recited in claim 14 wherein the warning is further a function of waveform frequency.

Claim 20 (previously presented): The method for monitoring rotating machinery as recited in claim 14 wherein the warning is further a function of rotor rotational frequency.

Claim 21 (canceled).

Claim 22 (previously presented): A method for monitoring rotating machinery comprising the steps of:

- detecting shaft voltage in the rotating machinery;
- determining rate of change in the shaft voltage;
- monitoring real-time shaft voltage values over time;
- producing a warning as a function of the change and/or rate of change, in the shaft voltage, wherein the warning generated is indicative of a developing problem with the rotating machinery.

Claim 23 (previously presented): The method for monitoring rotating machinery as recited in claim 22 wherein monitoring real-time shaft voltage values over time further comprises sampling real-time shaft voltage values for data reduction and compression over time.

Claim 24 (previously presented): The method for monitoring rotating machinery as recited in claim 22 wherein the warning is indicative of a developing problem with an electric motor.

Claim 25 (previously presented): The method for monitoring rotating machinery as recited in claim 22 wherein determining rate of change in the shaft voltage further comprises determining a first order derivative of the shaft voltage.

Claim 26 (previously presented): The method for monitoring rotating machinery as recited in claim 22 wherein the warning is further a function of waveform frequency.

Claim 27 (previously presented): The method for monitoring rotating machinery as recited in claim 22 wherein the warning is further a function of rotor rotational frequency.